

REMARKS

The Examiner is thanked for the performance of a thorough search.

By this amendment, Claims 1 and 16 have been amended and new Claims 31-34 have been added. Hence, Claims 1-34 are pending in this application.

INTERVIEW SUMMARY

The Applicant thanks the Examiner for the Interview conducted on November 9, 2004.

The interview was between Examiner Alam and the Applicant's attorney, Chris Brokaw.

Pending Claim 1 that was rejected in the Office Action was discussed, along with U.S. Patent No. 5,606,693 issued to Nilsen et al ("*Nilsen*"). In particular, the discussion focused on the distinction between a general purpose operating system and a special purpose operating system. The Applicant is providing herein the amendment that was proposed during the interview.

SUMMARY OF THE REJECTIONS

Claims 1-3, 5-8, 12-18, 20-23, and 27-30 have been rejected under 35 U.S.C. 35 U.S.C. § 102(b) for allegedly being anticipated by *Nilsen*. Claims 4 and 19 have been rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over *Nilsen* in view of U.S. Patent Number 5,627,994 issued to Levy et al. ("*Levy*"). Claims 9-11 and 24-26 have been rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over *Nilsen* in view of U.S. Patent Number 5,838,918 issued to Prager et al. ("*Prager*").

The rejections are respectfully traversed.

CLAIMS 1 AND 16 ARE PATENTABLE OVER THE CITED ART

Claim 1 recites a combination of elements that are not disclosed, taught, or suggested by *Nilsen*. Claim 1, as amended, recites the following combination of elements:

“A database appliance, comprising:
a database server; and
a special purpose operating system, generated by modifying a general purpose operating system, whose configuration is dictated based on a set of services required by the database server,
wherein the special purpose operating system is the only operating system installed on and executed by the database appliance” (emphasis added).

It is respectfully submitted that Claim 1 includes one or more limitations that are not taught or suggested by *Nilsen*. For example, Claim 1 requires that a database appliance comprise “a special purpose operating system, generated by modifying a general purpose operating system, whose configuration is dictated based on a set of services required by the database server” and “wherein the special purpose operating system is the only operating system installed on and executed by the database appliance.” As explained in further detail below, these limitations are not taught or suggested by *Nilsen*.

Difference between a general purpose operating system and a special purpose operating system

General purpose operating systems attempt to provide services to address all possible needs of all possible types of software. For example, general purpose operating systems often employ complex I/O techniques for handling I/O intensive applications, complex techniques to support computation intensive applications, and complex communication techniques to support communication intensive applications, since the general purpose operating system may be used in a variety of different contexts. Many of the services provided by the general purpose operating system may not be required in a specific context in which the operating

system may actually be used. For example, paragraphs 6-8 of the Applicants' disclosure describe how the services provided by a general purpose operating system may vastly outnumber the actual services required by the operating system, thereby resulting in an unnecessarily complex and difficult to manage system. Also, as a general purpose operating system is configured to accommodate a variety of contexts, the general purpose operating system is not optimized for use in any particular context.

In sharp contrast, the configuration of a special purpose operating system is dictated based on a set of services that are actually required. For example, in Claim 1, the special purpose operating system has a configuration that "is dictated on a set of services required by the database server." Advantageously, the elements of Claim 1 define a database appliance that reduces the total cost of maintaining the database appliance, as compared to a computer system that runs a database server on top of a general purpose operating system. Further, the special purpose operating system of Claim 1 is optimized for the intended use of the database appliance, namely, providing the set of services required by the database server executing on the database appliance.

A special purpose operating system is a full-fledged operating system, not merely a subset of a general purpose operating system that is providing a set of services to a particular application. This distinction has been expressly clarified in Claim 1 by the inclusion of "wherein the special purpose operating system is the only operating system installed on and executed by the database appliance."

Nilsen lacks any suggestion of a special purpose operating system

Nilsen lacks any disclosure, teaching, or suggestion of a special purpose operating system as claimed. The portion of *Nilsen* cited to show a special purpose operating system

(Abstract, Col. 2, lines 15-35) does not even discuss a general purpose operation system, let alone discuss a special purpose operating system. Instead of discussing a special purpose operating system, the cited portion of *Nilsen* merely describes an approach for logging large volumes of data to a plurality of database servers. However, the disclosure of *Nilsen* is silent with respect to how any operating system plays any part in the approach of *Nilsen*.

Thus, for the above reasons, *Nilsen* cannot possible disclose, teach, or suggest the elements of “a special purpose operating system, generated by modifying a general purpose operating system, whose configuration is dictated based on a set of services required by the database server, wherein the special purpose operating system is the only operating system installed on and executed by the database appliance” as featured in Claim 1.

Consequently, it is respectfully submitted that Claim 1 features one or more limitations that are not disclosed, taught, or suggested by the prior art. Claim 16 features limitations that are similar to Claim 1, but which are recited in a method format. Therefore, for at least the reasons discussed above with respect to Claim 1, it is respectfully submitted that Claim 16 is also not disclosed, taught, or suggested by the prior art. It is respectfully submitted that Claim 1 and Claim 16 are therefore patentable over the cited art, and are each in condition for allowance.

CLAIM 12 AND CLAIM 27 ARE PATENTABLE OVER THE CITED ART

In rejecting Claims 12-15, and 16-30, the Office Action merely states, “the subject matter of claims 12-15, 16-26, and 27-30 are rejected in the analysis above in claims 1-11 and these claims are rejected on that basis.” However, there are limitations featured in Claims 12 and 27 that do not appear in Claims 1-11. For example, Claim 12 features:

“A database appliance, comprising:
an operating system; and
a database server generated from another database server by modifying the
code of said other database server to optimize the code for execution on
said database appliance,
wherein the database server obtains services of said operating system by
making calls to said operating system during execution of said database
server” (emphasis added).

Claims 1-11 do not feature the elements of “a database server generated from another database server by modifying the code of said other database server to optimize the code for execution on said database appliance” and “wherein the database server obtains services of said operating system by making calls to said operating system during execution of said database server.” Consequently, the Office Action does not provide any arguments explaining why these elements are shown by the cited art.

Further, no portion of any cited art reference shows the above-quoted combination of elements. For example, *Nilsen* does not contain a teaching of how to generate a database server, let alone a teaching of generating a database server “from another database server by modifying the code of said other database server to optimize the code for execution on said database appliance” as featured in Claim 12.

Claim 27 contains limitations similar to that of Claim 12, except that the limitations of Claim 27 are recited in a method format. Consequently, it is respectfully submitted that one or more elements of Claim 27 are not disclosed, taught, or suggested by the cited art for at least the reasons given above with respect to Claim 12. As one or more elements of Claims 12 and 27 are not disclosed, taught, or suggested by the cited art, it is respectfully submitted that Claims 12 and 27 are patentable over the cited art and are in condition for allowance.

**DEPENDENT CLAIMS 2-11, 13-15, 17-26, AND 28-30 ARE PATENTABLE OVER
THE CITED ART**

Claims 2-11, 13-15, 17-26, and 28-30 are dependent claims, each of which depends (directly or indirectly) on one of the claims discussed above. Each of Claims 2-11, 13-15, 17-26, and 28-30 is therefore allowable for the reasons given above for the claim on which it depends.

In addition, each of Claims 2-11, 13-15, 17-26, and 28-30 introduces one or more additional limitations that independently render it patentable. For example, Claims 2 and 17 each feature the element of “wherein the database server was generated from another database server by modifying the code of the other database server to optimize the code for execution on said database appliance.” The portion of *Nilsen* cited to show this element (Col. 3, lines 60-65) merely states, *in toto*:

The controller assigns database servers based on the type of request, the load on each of the servers, and priority information. The controller 132 also maintains a record of information about the type of request, and the start and end times for that logging request.

The above-cited portion of *Nilsen* lacks any discussion of generating a database server; consequently, the above-cited portion of *Nilsen* cannot possibly show the features of Claims 2 and 17 asserted by the Office Action.

Claims 3 and 18 each feature the element of “wherein the hardware for said database appliance is selected and configured to optimize performance of one or more services to be performed by the database server.” The portion of *Nilsen* cited to show this element (Col. 3, lines 60-65) merely states, *in toto*:

The controller assigns database servers based on the type of request, the load on each of the servers, and priority information. The controller 132 also maintains a record of information about the type of request, and the start and end times for that logging request.

The above-cited portion of *Nilsen* lacks any discussion of selecting or configuring the hardware of a database appliance; consequently, the above-cited portion of *Nilsen* cannot possibly show the features of Claims 3 and 18 asserted by the Office Action.

Claims 7 and 22 each feature the additional elements of “a self-configuration module that is capable of performing the steps of: detecting an environment in which the database appliance is being used; and configuring the database appliance based upon the detected environment.” The portion of *Nilsen* cited to show this element (Col. 3, lines 60-65) merely states, *in toto*:

The controller assigns database servers based on the type of request, the load on each of the servers, and priority information. The controller 132 also maintains a record of information about the type of request, and the start and end times for that logging request.

The above-cited portion of *Nilsen* lacks any discussion of any functional component that is capable of detecting its environment or configuring itself based on the detected environment; consequently, the above-cited portion of *Nilsen* cannot possibly show the features of Claims 7 and 22 asserted by the Office Action.

Claims 13-15 and 28-30 each contain one or more limitations for which the Office Action does not supply any arguments explaining why these limitations are disclosed, taught, or suggested by the cited art, as discussed above with respect to Claims 12 and 27. Each of Claims 13-15 and 28-30 also contain additional limitations that are not shown by the cited art. For example, Claims 13 and 28 each feature the element of “wherein said operating system is a special purpose operation system whose code has been optimized for use as part of said database appliance.” This element is not disclosed, taught, or suggested by any cited art reference.

Claims 14 and 29 each feature the elements of “a self-configuration module that is capable of performing the steps of: detecting an environment in which the database appliance is being used; and configuring the database appliance based upon the detected environment.” These elements are not disclosed, taught, or suggested by any cited art reference.

Claims 15 and 30 each feature the element of “wherein the database appliance allocates a CPU share for a process and assigns a priority to the process based on the changing resource demands associated with the process.” This element is not disclosed, taught, or suggested by any cited art reference.

In addition, each of Claims 4-6, 8-11, 19-21, and 23-26 introduces one or more additional limitations that independently render it patentable over the combination of cited art references, even if the combination of cited art references had been properly combined. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time, although the Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

NEW CLAIMS 31-24 ARE PATENTABLE OVER THE CITED ART

Claims 31-24 are dependent claims, each of which depends (directly or indirectly) on one of the claims discussed above. Each of Claims 31-24 is therefore allowable for the reasons given above for the claim on which it depends.

In addition, each of Claims 31-24 introduces one or more additional limitations that independently render it patentable. For example, Claims 31 and 33 each feature “wherein the step of modifying the general purpose operating system includes adding one or more features

to the general purpose operating system, and wherein the one or more features are used to provide said set of services to the database server.” No portion of any cited art reference discusses modifying a general purpose operating system by adding one or more features to the general purpose operating system, let alone discusses the limitation of “wherein the one or more features are used to provide said set of services to the database server.”

Claims 32 and 34 each feature “wherein the step of modifying the general purpose operating system includes removing one or more features of the general purpose operating system that are not required to provide said set of services to the database server.” No portion of any cited art reference discusses modifying a general purpose operating system by removing one or more features to the general purpose operating system that are not required to provide a set of services to a database server.

CONCLUSION

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested. If there are any additional charges, please charge them to Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

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on December 6, 2004

by



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